

41



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/840,193	05/06/2004	Federico Perni	U 015183-5	6994
140	7590	04/13/2007		
LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			EXAMINER BOES, TERENCE	
			ART UNIT 3682	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/13/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/840,193	<b>Applicant(s)</b> PERNI ET AL.	
	<b>Examiner</b> Terence Boes	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 05/06/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Applicant has submitted English abstracts of JP 06 017898, and JP 11 132305, however, the entirety of the documents have not been received and therefore have not been considered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 11-13, the phrases "type of material" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "type of material"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Is applicant claiming metal, or rather is

Art Unit: 3682

applicant claiming a material of the same "type" as metal? It is unascertainable as to what a "type of material" is.

The term "small" in claim 14 is a relative term which renders the claim indefinite. The term "small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. What difference between coefficients of thermal expansion would be considered "small"?

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8-10, and 14, as best understood, are rejected under 35

U.S.C. 102(b) as being anticipated by Takeda et al. US 6,276,255.

Takeda et al. disclose:

- A shaft (11) having a longitudinal axis and an external thread
- A spiral casing (13) mounted coaxially with said shaft
- At least one set of balls interposed between the shaft and the casing (12)
- Two seals fitted, coaxially with said axis, between the shaft and the casing to define, together with the shaft and the casing, a chamber (C4/L45-50)
- Wherein each seal comprises an annular member (20) made of a first material (resin which is a plastic and/or polymer material, C4/L55-57)

having a first coefficient of thermal expansion and at least one insert (22) fully embedded within said annular member and being made of a second material (see fig. 4, cross hatching indicates 22 is metal, also see MPEP 608.02 for material/ hatching correlation) having a second coefficient of thermal expansion lower than said first coefficient (it is well known that plastic and metal have different coefficients of thermal expansion).

- Wherein said insert is an annular insert
- Wherein said insert has a substantially circular cross section
- Wherein said first material is a plastic material (resin which is a plastic and/or polymer material, C4/L55-57)
- Wherein said first material is a polymer material (resin which is a plastic and/or polymer material, C4/L55-57)
- Wherein said second material is a metal material (see fig. 4, cross hatching indicates 22 is metal, also see MPEP 608.02 for material/ hatching correlation)
- Wherein each annular member is defined axially by two surfaces (see fig 4) substantially perpendicular to said axis, and comprises a number of teeth (214) projecting axially from one of said surfaces and equally spaced about said axis
- Wherein each tooth is substantially-sector shaped
- Wherein each annular member has an internal thread of substantially the same hand as the external thread (see fig 4)

Art Unit: 3682

Regarding claim 14

- a shaft(11);
- a spiral casing (13) mounted coaxially with the shaft;
- two seals, fitted coaxially with the shaft, between the shaft and the casing to define, together with the shaft and the casing, a chamber for containing lubricant between the seals (C4/L45-50);
- wherein the shaft and the casing have a first coefficient of thermal expansion; each of the seals has a second coefficient of thermal expansion (shafts and seals inherently have coefficients of thermal expansion), and comprises an annular member (20) and at least one insert fully embedded within the annular member (22)
- whereby a difference between the first coefficient of thermal expansion of the shaft and the casing, and the second coefficient of thermal expansion of the seals is small (as best understood, the difference between the coefficient's of thermal expansion is small).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. US 6,276,255 in view of Balsells US 5,984,316.

Takeda et al. disclose all of the claimed subject matter as described above.

Takeda et al. also disclose:

- Wherein each annular member is defined externally by a surface substantially coaxial with said axis (see fig 4, radially outermost surface of 20), comprises an annular recess (see fig. 4, recess is shown containing 22) opening outwards at said surface.

Takeda et al. do not disclose an O-ring housed in an annular recess.

Balsells teaches O-ring (80) housed in an annular recess for the purpose of providing a secondary static seal between a seal ring and a housing (C5/L30-33).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Takeda et al. and provide O-ring housed in an annular recess, as taught by Balsells, for the purpose of providing a secondary static seal between a seal ring and a housing.

Art Unit: 3682

5. Claims 11-13, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. US 6,276,255 in view of applicant admitted prior art (see instant applicant, background of the invention.)

Takeda et al. discloses all of the claimed subject matter as described above. Takeda et al. does not explicitly disclose the materials of construction of the shaft and nut (spiral casing),

Applicant's admitted prior art disclosure teaches a shaft and nut being made of metal (see instant application Pg1/L19) for the purpose of providing a durable, strong, and resilient material.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Takeda et al. and provide a shaft and nut being made of metal, as taught by Applicant's admitted prior art disclosure, for the purpose of providing a durable, strong, and resilient material.



***Response to Arguments***

6. Applicant's arguments filed 03/05/2007 have been fully considered but they are not persuasive.

7. The applicant argues "... Takeda et al. do not disclose any insert fully embedded within the annular seal member...".

In response, referring to figure 4 of Takeda et al., because 22 is located below the outermost periphery of 20, it is "fully embedded within the annular seal member".

8. The applicant argues "Takeda et al. do not disclose in the description that the spring rings 22 are metal, and do not clearly show the structure which is claimed because spring rings 22 are inconsistently illustrated using cross-hatching in the section views of Figs. 4, 7, 10A, and 10B, but are not illustrated using cross-hatching in section views of Figs. 6 and 9.

In response, because spring rings 22 are clearly shown with cross-hatching corresponding to metal in at least 1 figure, Takeda et al. disclose 22 is made of metal.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terence Boes whose telephone number is (571) 272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

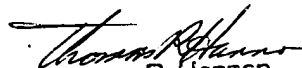
Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB

TB

4/11/07

  
Thomas R. Hannon  
Primary Examiner